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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,941	BLINICK ET AL.	
	Examiner	Art Unit	
	Ben C. Wang	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment dated August 8, 2007, responding to the May 8, 2007 Office action provided in the rejection of claims 1-30, wherein claims 1, 6-7, 20, and 29-30 have been amended.

Claims 1-30 remain pending in the application and which have been fully considered by the examiner.

Applicant's arguments with respect to claims rejection have been fully considered but are moot in view of the new grounds of rejection.

Claim Rejections – 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 7, 10, 13, 20-22, 26, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talati (Pub. No. US 2004/0044997 A1) (hereinafter 'Talati') in view of Hiller (Pat. No. US 6,658,659 B2) (hereinafter 'Hiller')

3. **As to claim 1** (Currently Amended), Talati discloses an apparatus for updating a code image (e.g., Fig. 2), comprising:

- a loader configured to load a new code image (e.g., [0014], lines 2-3; Fig. 2, element 102; [0047], lines 1-2) into a temporary memory location (e.g., Fig. 1, element 108; [0009], staging area) separate from a memory space (e.g., Fig. 1, element 110; [0009], line 2, runtime area) occupied by and used by an old code image (e.g., Fig. 2, elements 218, 110; [0046], lines 1-8; [0047], lines 1-2); and
- a copy module configured to copy the new code image into the memory space occupied by the old code image (e.g., Fig. 2, element 202; Fig. 3, element 302; [0013], lines 1-3).

But, Talati does not explicitly disclose a bootstrap module, within the new code image, configured to selectively reconcile incompatibilities between the old code image and the new code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses a bootstrap module, within the new code image (e.g., Col. 13, Lines 25-32 – To overcome this backwater incompatibility, the present invention permits (or may require) new versions of a program to restrict use by other application. In one embodiment, a mechanism is provided which allows a module to declare incompatibilities with older programs that it may interact with in order to provide a restriction on backward incompatibility. This mechanism includes a backwater incompatibility expression stored in the new module), configured to selectively reconcile incompatibilities between the old code image and the new code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded

software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati's system to further provide a bootstrap module, within the new code image, configured to selectively reconcile incompatibilities between the old code image and the new code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

4. **As to claim 2** (original) (incorporating the rejection in claim 1), Talati discloses the apparatus wherein the old code image is updated substantially concurrent with normal execution of transactions by the apparatus (e.g., [0006]; [0008], lines 5-12]; [0011]).

5. **As to claim 3** (original) (incorporating the rejection in claim 1), Talati discloses the apparatus further comprising an initialization module configured to initiate execution of a run-time segment of the new code image (e.g., [0014]).

6. **As to claim 4** (original) (incorporating the rejection in claim 1), Talati discloses the apparatus wherein the copy module copies the new code image into the memory space in response to a load request (e.g., Fig. 2, Copier copies new code; Fig. 3, element 302).

Hiller discloses the apparatus wherein in response to reconciliation of the incompatibilities (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name 2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

7. **As to claim 7** (Currently Amended) (incorporating the rejection in claim 1), Talati discloses the bootstrap module recognizing persistent data associated with the old code image and associates the persistent data with the new code image such that the persistent data is available in response to execution of the run-time segment of the new code image (e.g., [0012] – the conversion module provides two separate functionalities (a) to selectively reconcile incompatibilities between the old code image and the new code image cited in claim 1; and, (b) to recognize persistent data described in this claim).

8. **As to claim 10** (original), Talati discloses an apparatus for updating a code image (e.g., Fig. 2, copier copies new code), comprising of an update module configured to load a new code image (e.g., [0014], lines 2-3; Fig. 2, element 102; [0047], lines 1-2) into a temporary memory location (Fig. 1, element 108; [0009], line 2, staging area) separate from a memory space occupied by and used by an old code image (e.g., Fig. 2, elements 218, 110; [0046], lines 1-8) and a bootstrap module within the new code image that executes subsequent to the update module (e.g., Fig. 2, element 202; [0047], lines 1-2).

But, Talati does not disclose the bootstrap module configured to selectively reconcile incompatibilities between the old code image and the new code image prior to copying the new code image into the memory space occupied by the old code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses the bootstrap module configured to selectively reconcile incompatibilities

between the old code image and the new code image (e.g., Col. 13, Lines 25-32 – To overcome this backwater incompatibility, the present invention permits (or may require) new versions of a program to restrict use by other application. In one embodiment, a mechanism is provided which allows a module to declare incompatibilities with older programs that it may interact with in order to provide a restriction on backward incompatibility. This mechanism includes a backwater incompatibility expression stored in the new module) prior to copying the new code image into the memory space occupied by the old code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati's system to further provide the bootstrap module configured to selectively reconcile incompatibilities between the old code image and the new code image prior to copying

the new code image into the memory space occupied by the old code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

9. **As to claim 13** (original), Talati discloses a system that overlays an old code image with a new code image with minimal interruption of operations being performed by execution of the old code image (e.g., [0011]), the system comprising of a memory comprising an old code image (e.g., Fig. 1, element 110; Fig. 2, element 108) and a buffer (e.g., Fig. 1, element 108; Fig. 2, element 110) configured to store a new code image; a processor executing instructions of the old code image to perform one or more operations (e.g., Fig. 1, element 106), the processor configured to execute instructions of the old code image and the new code image (e.g., [0011]; [0032], lines 1-5); a data structure configured to store an old code image pointer (e.g., Fig. 2, elements 204, 208, and 212; [0023], lines 4-10) and a new code image pointer (e.g., Fig. 2, elements 206, 210, and 214; [0023], lines 11-16); wherein, in response to an interrupt, the processor begins executing bootstrap code within the new code image (e.g., [0040]).

But, Talati does not disclose the bootstrap code configured to reconcile incompatibilities between the old code image and the new code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses the bootstrap code configured to reconcile incompatibilities between the old

code image and the new code image (e.g., Col. 13, Lines 25-32 – To overcome this backwater incompatibility, the present invention permits (or may require) new versions of a program to restrict use by other application. In one embodiment, a mechanism is provided which allows a module to declare incompatibilities with older programs that it may interact with in order to provide a restriction on backward incompatibility. This mechanism includes a backwater incompatibility expression stored in the new module; Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati's system to further provide the bootstrap code configured to reconcile incompatibilities between the old code image and the new code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

10. **As to claim 20** (Currently Amended), Talati discloses a method for updating a code image (e.g., Fig. 2, Copier copies new code), comprising of loading a new code image into a temporary memory location (e.g., Fig. 1, element 108; [0009], staging area) separate from a memory space (e.g., Fig. 1, element 110; [0009], line 2, runtime area) occupied by and used by an old code image (e.g., Fig. 2, elements 218, 110; [0046], lines 1-8; [0047], lines 1-2); copying the new code image into the memory space occupied by the old code image (e.g., Fig. 2, element 202; Fig. 3, element 302).

But, Talati does not disclose a conversion module configured to selectively reconcile incompatibilities between the old code image and the new code image using bootstrap code of the new code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4

– step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Talati and the teachings of Hiller to further provide selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

11. **As to claim 21** (original) (incorporating the rejection in claim 20), Talati discloses the method wherein the old code image is updated substantially concurrently with execution of regular computer operations (e.g., [0011]; [0014]).

12. **As to claim 22** (original) (incorporating the rejection in claim 20), Talati discloses the method further comprising initiating execution of a run-time segment of the new code image (e.g., [0049]).

13. **As to claim 26** (original) (incorporating the rejection in claim 20), Talati discloses the method further comprising determining persistent data associated with the old code image and associating the persistent data with the new code image such that the persistent data is available in response to execution of a run-time segment of the new code image (e.g., [0011]; [0012]).

14. **As to claim 29** (Currently Amended), Talati discloses an apparatus for updating a code image (e.g., [0014], lines 2-3; Fig. 2, copier copies new code; [0047], lines 1-2), the apparatus comprising of means for loading a new code image (e.g., Fig. 2, element 102) into a temporary memory location (e.g., Fig. 1, element 108; [0009], staging area) separate from a memory space (e.g., Fig. 1, element 110) occupied by and used by an old code image; means for copying the new code image into the memory space occupied by the old code image (e.g., Fig. 2, element 202; Fig. 3, element 302).

But, Talati does not disclose a conversion module configured to selectively reconcile incompatibilities between the old code image and the new code image using bootstrap code of the new code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses means for selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded

software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati's system to further provide means for selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

15. **As to claim 30** (Currently Amended), Talati discloses an article of manufacture comprising a program storage medium readable by a processor and embodying one or more instructions executable by a processor to perform a method for updating a code image (e.g., Fig. 1), the method comprising of loading a new code image into a

temporary memory location separate from a memory space occupied by and used by an old code image (e.g., Fig. 2, elements 218, 110; [0046], lines 1-8; [0047], lines 1-2); copying the new code image into the memory space occupied by the old code image (e.g., Fig. 2, element 202; Fig. 3, element 302).

But, Talati does not disclose a conversion module configured to selectively reconcile incompatibilities between the old code image and the new code image using bootstrap code of the new code image.

However, in an analogous art of *compatible version module loading*, Hiller discloses the method of selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati's system to further provide to further provide the method of selectively reconciling incompatibilities between the old code image and the new code image using bootstrap code of the new code image using bootstrap code of the new code image in Talati system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hiller (i.e. Abstract, Lines 10-13).

16. Claim 5-6, 8-9, 11-12, 23-25, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talati in view of Hiller and further in view of Schwabe

17. **As to claim 5** (original) (incorporating the rejection in claim 1), Talati and Hiller do not disclose the apparatus further comprising a logic module configured to access version information for the old code image and version information for the new code image and identify an incompatibility based at least in part on a difference between the version information.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the apparatus further comprising a logic module configured to access version information for the old code image and version information for the new code image and identify an

incompatibility based at least in part on a difference between the version information (e.g., Fig. 17, element 1440 – version; Fig. 18, element 1470 – version; Fig. 19, element 1515 – verify version of API definition file used during verification is compatible with version of referenced binary file; Fig. 20A – 3. verify backward compatible version with content; Fig. 20C – verify versions using API definitions files, elements of 1600, 1605, and 1610).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the apparatus further comprising a logic module configured to access version information for the old code image and version information for the new code image and identify an incompatibility based at least in part on a difference between the version information in Talati-Hiller system.

The motivation is that use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

18. **As to claim 6** (Currently Amended) (incorporating the rejection in claim 5), Schwabe discloses the apparatus wherein the bootstrap module is configured to update modules that interface with the new code image based at least in part on a difference between the version information (Fig. 17, element 1440 – version; Fig. 18, element

1470 – version; Fig. 19, element 1515 – verify version of API definition file used during verification is compatible with version of referenced binary file; Fig. 20A – 3. verify backward compatible version with content; Fig. 20C – verify versions using API definitions files, elements of 1600, 1605, and 1610).

19. **As to claim 8** (original) (incorporating the rejection in claim 1), Talati and Hiller do not disclose the apparatus wherein at least one of the incompatibilities comprises different initialization requirements.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the apparatus wherein at least one of the incompatibilities comprises different initialization requirements (e.g., Fig. 21A, Lines 25-36).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the apparatus wherein at least one of the incompatibilities comprises different initialization requirements in Talati-Hiller system.

The motivation is use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

20. **As to claim 9** (original) (incorporating the rejection in claim 1), Talati and Hiller do not disclose the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image (e.g., Col. 22, Lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image in Talati-Hiller system.

The motivation is use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

21. **As to claim 11** (original) (incorporating the rejection in claim 10), Talati and Hiller do not explicitly disclose the apparatus wherein the bootstrap module comprises a

conversion module configured to reconcile the incompatibilities base on version information for the old code image and the new code image and a copy module configured to copy the new code image over the old code image in response to reconciliation of the incompatibilities.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the apparatus wherein the bootstrap module comprises a conversion module configured to reconcile the incompatibilities base on version information for the old code image and the new code image and a copy module configured to copy the new code image over the old code image in response to reconciliation of the incompatibilities (e.g., Fig. 17, element 1440 – version; Fig. 18, element 1470 – version; Fig. 19, element 1515 – verify version of API definition file used during verification is compatible with version of referenced binary file; Fig. 20A – 3. verify backward compatible version with content; Fig. 20C – verify versions using API definitions files, elements of 1600, 1605, and 1610).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the apparatus wherein the bootstrap module comprises a conversion module configured to reconcile the incompatibilities base on version information for the old code image and the new code image and a copy module configured to copy the new code image over the old code image in response to reconciliation of the incompatibilities in Talati-Hiller system.

The motivation is use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

22. **As to claim 12** (original) (incorporating the rejection in claim 10), Talati and Hiller do not explicitly disclose the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image (e.g., Col. 22, Lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the apparatus wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image in Talati-Hiller system.

The motivation is use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring

instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

23. **As to claim 23** (original) (incorporating the rejection in claim 20), Talati and Hiller do not disclose the method wherein the new code image is not copied into the memory space until incompatibilities are reconciled.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the method wherein the new code image is not copied into the memory space until incompatibilities are reconciled (e.g., Col. 5, Lines 49-53; Col. 10, Lines 40-44; Col. 11, Line 58 through Col. 12, Lines 6; Figs. 15A-15B; Col. 20, Line 64 through Col. 21, Line 4, 14-20; Fig. 17; Col. 22, Lines 4-16; Figs. 20A-20D; Col. 24, Lines 24-32).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the method wherein the new code image is not copied into the memory space until incompatibilities are reconciled in Talati-Hiller system.

The motivation is that use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

24. **As to claim 24** (original) (incorporating the rejection in claim 20), Talati and Hiller do not disclose the method further comprises accessing capability information for the old code image and capability information for the new code image and identifying an incompatibility based at least in part on a difference between the capability information.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the method further comprises accessing capability information for the old code image and capability information for the new code image and identifying an incompatibility based at least in part on a difference between the capability information (e.g., Col. 9, Lines 6-11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the method further comprises accessing capability information for the old code image and capability information for the new code image and identifying an incompatibility based at least in part on a difference between the capability information in Talati-Hiller system.

The motivation is that use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

25. **As to claim 25** (original) (incorporating the rejection in claim 24), Schwabe discloses the method further comprising updating modules that interface with the new code image based at least in part on a difference between the capability information (e.g., Col. 9, Lines 6-11).

26. **As to claim 27** (original) (incorporating the rejection in claim 20), Talati and Hiller do not disclose the method wherein at least one of the incompatibilities comprises different initialization requirements.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the method wherein at least one of the incompatibilities comprises different initialization requirements (e.g., Fig. 21A, Lines 25-36).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the method wherein at least one of the incompatibilities comprises different initialization requirements in Talati-Hiller system.

The motivation is that use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

27. **As to claim 28** (original) (incorporating the rejection in claim 20), Talati does not disclose the method wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image.

However, in an analogous art of *Remote Incremental Program Binary Compatibility Verification Using API Definitions*, Schwabe discloses the method wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image (e.g., Col. 22, Lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Schwabe into the Talati-Hiller's system to further provide the method wherein at least one of the incompatibilities comprises a difference between data structures used by the old code image and data structures used by the new code image in Talati-Hiller system.

The motivation is that use of the verifier enables verification of a program's integrity and allows the use of an interpreter that does not execute the usual stack monitoring instructions during program execution, thereby greatly accelerating the program interpretation process as once suggested by Schwabe (i.e. Col. 13, Line 66 through Col. 14, Line 8).

28. Claim 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talati in view of Schwabe and further in view of Hiller

29. **As to claim 14** (original) (incorporating the rejection in claim 13), Talati and Schwabe do not disclose the system wherein the bootstrap code overlays the new code image in memory with the old code image in response to reconciliation of the incompatibilities.

However, in an analogous art of *Compatible Version Module Loading*, Hiller discloses the system wherein the bootstrap code overlays the new code image in memory with the old code image in response to reconciliation of the incompatibilities (e.g., Fig. 2A, element 206; Fig. 2B; Col. 3, Lines 42-46; Col. 4, Lines 64-67)).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Hiller into the Talati-Schwabe's system to further provide the system wherein the bootstrap code overlays the new code image in memory with the old code image in response to reconciliation of the incompatibilities in Talati-Schwabe system.

The motivation is that the system wherein the version aware bootstrap code will check and ensure that loaded software modules are compatible with one another and will therefore execute properly as once suggested by Hill (i.e. Abstract, Lines 10-13).

30. **As to claim 15** (original) (incorporating the rejection in claim 14), Talati discloses the system wherein in response to the interrupt, the processor executes an update module of the old code image that loads the new code image into the buffer (e.g., Fig. 3, step 302; [0040]; [0041]).

31. **As to claim 16** (original) (incorporating the rejection in claim 15), Talati discloses the system wherein the update module stores the old code image pointer (e.g., Fig. 2, elements 204, 208, and 212; [0023], lines 4-10) and the new code image pointer (e.g., Fig. 2, elements 206, 210, and 214; [0023], lines 11-16) in the data structure.

32. **As to claim 17** (original) (incorporating the rejection in claim 16), Talati discloses the system of wherein the update module reads a new code image header identified by the new code image pointer (e.g., Fig. 2, elements 206, 210; [0034]) to determine the location of the bootstrap code within the new code image (e.g., [0037], lines 5-7).

33. **As to claim 18** (original) (incorporating the rejection in claim 17), Schwabe discloses the system of wherein the bootstrap code identifies incompatibilities by reviewing capability fields of the old code image (e.g., Col. 9, Lines 6-11).

34. **As to claim 19** (original) (incorporating the rejection in claim 18), Schwabe discloses the system wherein the bootstrap code identifies incompatibilities by comparing version information of the new code image with version information of the old code image (e.g., Fig. 17, element 1440 – version; Fig. 18, element 1470 – version; Fig. 19, element 1515 – verify version of API definition file used during verification is compatible with version of referenced binary file; Fig. 20A – 3. verify backward

compatible version with content; Fig. 20C – verify versions using API definitions files, elements of 1600, 1605, and 1610).

Response to Arguments

Applicant's arguments filed on August 8, 2007 have been fully considered but they are not persuasive.

In the remarks, Applicant argues that:

a) The applicant argues that the claim 1, for example, neither reference from *Talati* and/or *Schwabe* teaches a "bootstrap module, within the new code image, configured to selectively reconcile incompatibilities between the old code image and new code image.

Examiner's response:

a) The prior art of *Hiller*, which was previously applied only for Claim 14, now applies to all of the pending claims. *Hiller* discloses a bootstrap module, within the new code image (e.g., Col. 13, Lines 25-32 – To overcome this backwater incompatibility, the present invention permits (or may require) new versions of a program to restrict use by other application. In one embodiment, a mechanism is provided which allows a module to declare incompatibilities with older programs that it may interact with in order to provide a restriction on backward incompatibility. This mechanism includes a backwater incompatibility expression stored in the new module), configured to

selectively reconcile incompatibilities between the old code image and the new code image (e.g., Abstract, Lines 1-2 – A system and method for loading software identifies versions of software modules to be loaded; Lines 10-13 – a 'version aware' loader ensures that loaded software modules are compatible with one another and will therefore execute properly; Fig. 2A, elements of 206 – compatibility vector, 208 – module name 1, version number 1, 210 – module name2, version number 2, and 212 – module name 3, version number 3; Fig. 4 – step 410 – for located module, is the version acceptable based on comparability vector; Fig. 3C, elements 342, 344, and 346; Col. 9, Lines 50-54 – the compatibility vector 342 includes two implicit load request entries 344 and 346 for the components 'syslog' and 'exlog' respectively. If the entries 344 and 346 are unresolved for the component 'IP forward 300', the loader would then proceed to resolve each in turn; Col. 12, Lines 25 through Col. 13, Line 11).

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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BCW

TUAN DAM
SUPERVISORY PATENT EXAMINER

October 16, 2007